DOCKET NO.: IOMC-0039 PATENT

Application No.: 09/763,014 Office Action Dated: May 16, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application.

## **Listing of Claims:**

Claims 1-12 cancelled.

13. (New) A card-type magnetic recording device comprising:

a head arm which carries a magnetic recording/reproducing head carried;

a motor for driving to revolve a disk which serves as a recording medium for recording of information;

a load ramp permitting to place said head on standby after retreat of the head from the surface area of the disk; and

an information processor:

wherein said head arm is formed in the shape of a flat plate and adopts a swing arm structure permitting swing motions about an axis in the base part; and

said load ramp is arranged at a distance from the peripheral edge of the disk.

- 14. (New) A card-type magnetic recording device according to claim 13, further comprising guide means for guiding the end of said head arm from said load ramp toward the surface area of the disk and also in the reverse direction.
- 15. (New) A card-type magnetic recording device according to claim 14, wherein said guide means is provided on said head arm.
- 16. (New) A card-type magnetic recording device according to claim 14, wherein said guide means is composed of a structure provided on the head arm and a structure provided on the side of the load ramp.
- 17. (New) A card-type magnetic recording device comprising:
  a head arm of swing arm structure, which carries a magnetic recording/reproducing head;

a motor for revolving a disk serving as a recording medium for recording/reproduction of information;

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a load ramp permitting to place said head on standby after retreat of the head from the surface area of the disk;

an information processor; and

a guide arm provided on the head arm at a position at a distance from the end toward the intermediate position in the longitudinal direction in a manner such that it projects toward the side opposite to the disk;

wherein the projection end of said guide arm remains on the load ramp when the end of the head arm, which moves toward the disk, is disengaged from the load ramp, thus maintaining the head arm end at an isolation position where the head does not make contact with the disk within the disk surface area, during the time until the guide arm is disengaged from the load ramp.

- 18. (New) A card-type magnetic recording device according to claim 17, wherein said load ramp has a support part for supporting the end of the head arm and a rail part for supporting the end of the guide arm, and each of the ends of the support part and the rail part on the side of the disk is formed in the shape of a taper surface of a thickness gradually reduced toward the disk.
- (New) A card-type magnetic recording device according to claim 18, wherein 19. the surface, which serves as the head arm end, of the support part is inclined toward the base part of the head arm to bring a contact portion of the head arm end with the support part closer to the base part of the head arm.
- 20. (New) A card-type magnetic recording device according to claim 18, wherein the taper surface in said support part begins at position closer to the disk side than the taper surface of the rail part.
- 21. (New) A card-type magnetic recording device according to claim 18, wherein the projection end of the guide arm is located closer to the inner side of the head arm than the end of the head arm while maintaining a difference in altitude, and the rail part and the support part are formed to maintain the same difference in altitude as the above difference.

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22. (New) A card-type magnetic recording device according to claim 20, wherein the projection end of the guide arm is located closer to the inner side of the head arm than the end of the head arm while maintaining a difference in altitude, and the rail part and the support part are formed to maintain the same difference in altitude as the above difference.

- 23. (New) A card-type magnetic recording device according to claim 17, wherein a part of the opposite edges of the head arm in a longitudinal direction are bent in the shape of letter U in section, and a lead wire is housed in the bent portion.
- 24. (New) A card-type magnetic recording device according to claim 17, wherein the head arm has a support spring whose end is formed in the shape of a gimbal part, the head is carried on the gimbal part, and the end of the gimbal part is engaged with an engagement hole formed at the end of the head arm.

[0089] Further, when the gutter-shaped parts 28 in the side edges of the arms 17 and 18 which are moving toward the retreat position, on the side of the load ramp mounting part 34, make contact with the taper surfaces 35b of the support part 35, the ends of the upper and lower arms 17 and 18 are placed in the slightly opened state as described above and therefore, the subsequent riding of the gutter-shaped parts 28 of the upper and lower arms 17 and 18 onto the taper surfaces 35b of the support part 35 becomes easy.

[0090] As a result, the upper and lower arms 17 and 18 may be guided to the upper and lower support surfaces 35a of the support part 35 of the load ramp 15 smoothly, respectively, so that they are positioned in a retreat position stably.

[0091] The above description has been given of one embodiment, in which the guide means for guiding the end of the head arm 14 is composed of the part on the side of the head arm 14 and the part on the side of the load ramp 15. However, the guide means may be composed of a guide arm on the side of the head arm 14 and a cam surface provided on the side of the frame plate 12, with which the guide arm makes contact, or may composed of a part on the side of the head arm 14.

## **CLAIMS**

- 1. A card-type magnetic recording device comprising:
- a head arm which carries a magnetic recording/reproducing head carried;
- a motor for driving to revolve a disk which serves as a recording medium for recording of information;
- a load ramp permitting to place said head on standby after retreat of the head from the surface area of the disk; and

an information processor:

wherein said head arm is formed in the shape of a flat plate and adopts a swing arm structure permitting swing motions about an axis in the base part; and

said load ramp is arranged at a distance from the peripheral edge of the disk.

- 2. A card-type magnetic recording device according to claim 1, further comprising guide means for guiding the end of said head arm from said load ramp toward the surface area of the disk and also in the reverse direction.
- 3. A card-type magnetic recording device according to claim 2, wherein said guide means is provided on said head arm.

- 4. A card-type magnetic recording device according to claim 2, wherein said guide means is composed of a structure provided on the head arm and a structure provided on the side of the load ramp.
- 5. A card-type magnetic recording device comprising: a head arm of swing arm structure, which carries a magnetic recording/reproducing head; a motor for revolving a disk serving as a recording medium for recording/reproduction of information:

a load ramp permitting to place said head on standby after retreat of the head from the surface area of the disk;

an information processor; and

a guide arm provided on the head arm at a position at a distance from the end toward the intermediate position in the longitudinal direction in a manner such that it projects toward the side opposite to the disk;

wherein the projection end of said guide arm remains on the load ramp when the end of the head arm, which moves toward the disk, is disengaged from the load ramp, thus maintaining the head arm end at an isolation position where the head does not make contact with the disk within the disk surface area, during the time until the guide arm is disengaged from the load ramp.

- 6. A card-type magnetic recording device according to claim 5, wherein said load ramp has a support part for supporting the end of the head arm and a rail part for supporting the end of the guide arm, and each of the ends of the support part and the rail part on the side of the disk is formed in the shape of a taper surface of a thickness gradually reduced toward the disk.
- 7. A card-type magnetic recording device according to claim 6, wherein the surface, which serves as the head arm end, of the support part is inclined toward the base part of the head arm to bring a contact portion of the head arm end with the support part closer to the base part of the head arm.
- 8. A card-type magnetic recording device according to claim 6, wherein the taper surface in said support part begins at position closer to the disk side than the taper surface of the rail part.

- 9. A card-type magnetic recording device according to claims 6 or 8, wherein the projection end of the guide arm is located closer to the inner side of the head arm than the end of the head arm while maintaining a difference in altitude, and the rail part and the support part are formed to maintain the same difference in altitude as the above difference.
- 10. A card-type magnetic recording device according to claim 5, wherein a part of the opposite edges of the head arm in a longitudinal direction are bent in the shape of letter U in section, and a lead wire is housed in the bent portion.
- 11. A card-type magnetic recording device according to claim 5, wherein the head arm has a support spring whose end is formed in the shape of a gimbal part, the head is carried on the gimbal part, and the end of the gimbal part is engaged with an engagement hole formed at the end of the head arm.